

TABLE 1

ACTIVITY AND ABUNDANCE OF FLOWER VISITING INSECTS OF ALMOND DURING MARCH, 1979

Name of species	9 h	10 h	11 h	12 h	13 h	14 h	15 h	16 h	17 h	Total
	Number of insects/5 trees at									
<i>Apis mellifera</i>	0	2	9	12	16	12	13	12	10	86
<i>Apis dorsata</i>	7	16	44	33	33	12	21	11	7	184
<i>Apis florea</i>	1	1	6	5	6	4	1	2	1	27
Total	8	19	59	50	55	28	35	25	18	297

number was negligible. In the earlier reports on almond pollination honeybees have been reported practically the only pollinating insects of economic importance (Muttoo 1950, Purdie and Winn 1965, McGregor 1976). The period of maximum activity of all the three species of honeybees was from 11.00 a.m. to 1.00 p.m. *A. dorsata* started visiting the flowers in sufficient numbers even at 9.00 a.m. than the other species of bees. *A. mellifera* was active even upto 5.00 p.m. The activity of all the flower visiting insects was very low on cloudy days.

In conclusion, honeybees were the only dominant flower visiting insects of almond at Ludhiana.

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MCGREGOR, S. E. (1976): Insect pollination of cultivated crop plants. USDA Agriculture Hand Book No. 496, 411 p.

23. BUTTERFLIES OF ARUNACHAL PRADESH

Altitudinal zones of the Eastern Himalayas have their own fauna. The ecosystem varies from west to east and the altitudinal zones are sharply defined and telescoped into tightly packed tiers of life zones. Considering the importance of North Eastern Himalaya as a gateway for oriental biota in the peninsula a

thorough ecological survey of the area is essential especially in the face of rapid man made environmental changes. One such expedition was organised jointly by the Bombay Natural History Society and the Smithsonian Institution, Washington D.C. for the avifaunal survey of the Arunachal Pradesh. During the survey

party also collected butterflies from this area.

In the past butterflies of North Eastern India had been studied by several persons but very little collection had been made from Tirap division. [Varshney & Chanda (1971) *Ind. Mus. Bull.* 6(1) 28-53]. The present report deals with the small butterfly collection made by Mr. S. A. Hussain and Mr. Rex Pimento in 1979 at Tirap division. Tirap Frontier division is in the extreme east of Arunachal Pradesh adjoining the Kachin District of Burma over the Patkai range of hills. Collection was done at Miao c. 300 m from 3rd to 8th March and Bhimraj (40th mile camp from Miao) from 10th to 25th March, 1979.

Family : DANAIDAE

1. **Danaus aglea** (Kluk) Glassy Tiger. Common.
Distribution : Assam, Burma.
2. **Danaus melaneus** (Cramer) Chocolate Tiger. Common.
Distribution : Sikkim to Assam and Burma.
3. **Danaus sita** (Kollar) Chestnut Tiger. Not rare.
Distribution : Shillong, Khasi Hills, Assam and Burma.
4. **Danaus melissa** (Cramer) : Dark Blue Tiger. Common.
Distribution : Kulu to Burma and Assam.
5. **Euploea mulciber** (Cramer) Striped Blue-Crow. Common.
Distribution : Assam and Burma.

Family : SATYRIDAE

6. **Lethe bhadra** M. Tailed Labyrinth. Rare.
Distribution : Sikkim to Burma.
7. **Lethe sinoryx** Hew. Tailed Red Forester. Rare.

Distribution : Sikkim to Burma.

8. **Ypthima baldus** F. Common Fivering. Very Common.
Distribution : Chaneba to Assam and Burma.
9. **Orsotrioena medus** F. Nigger. Common.
Distribution : Sikkim to Assam and Burma.
10. **Elymnias hypermnestra** Linn. Common Palmfly. Common.
Distribution : Bengal, Assam and Burma.

Family: NYMPHALIDAE

11. **Apatura ambica** Kollar Indian Purple Emperor. Not rare.
Distribution : Burma.
12. **Euthalia kesava** (Moore) Powdered Baron. Common.
Distribution : Sikkim to Assam and Burma.
13. **Limenitis daraxa** (Doubl.) Green Commander. Not rare.
Distribution : NE India, Burma.
14. **Pantoporia selenophora** (Kollar) Staff sergeant. Rare.
Distribution : Assam, Bihar, Burma.
15. **Neptis hordonia** Stoll Common Lascar. Common.
Distribution : Dehra Dun to Assam, Burma.
16. **Precis almana** (Linn.) Peacock Pansy. Common.
Distribution : Throughout India and Burma.
17. **Vanessa cardui** (Linn.) Painted Lady. Very common.
Distribution : Throughout India, Assam and Burma.
18. **Cethosia biblis** (Drury) Red Lacewing. Common.
Distribution : Nepal, Sikkim, Bhutan, Assam and Burma.

19. **Ergolis merione** (Cramer) Common.
Distribution : Assam and Burma.
Family : ERYCINIDAE
20. **Abisara neophron** (Hewitson) Tailed Judy. Not rare.
Distribution : Nepal, Hills of NE India, Burma.
Family : LYCAENIDAE
21. **Castalius rosimon** (Fab.) Common Pierrot. Common.
Distribution : Throughout India and Burma.
22. **Heliophorus epicles** (Fruh.) Purple sapphire. Common.
Distribution : Kumaon to Assam and Burma.
23. **Cheritra freja** (Fab.) Common Imperial. Common.
Distribution : Kumaon to Assam and Burma.
Family : PAPILIONIDAE
24. **Papilio protenor** (Cramer) Not rare.
Distribution : Assam and Burma.
25. **Papilio helenus** (Linn.) Red Helen. Common.
Distribution : Mussoorie to Assam and Burma.
26. **Graphium sarpedon** (Linn.) Common
- Blue Bottle. Common.
Distribution : Kashmir to Assam and Burma.
27. **Leptocircus curius** F. White Dragontail. Not rare.
Distribution : Assam and Burma.
Family : PIERIDAE
28. **Pieris canidia** (Spairman) Indian Cabbage White. Very Common.
Distribution : Himalaya and Hills of Assam and Burma.
29. **Pieris brassicae** (Linn.) Large Cabbage White. Very Common.
Distribution : Assam.
30. **Ixias pyrene** (Linn.) Yellow Orange Tip. Common.
Distribution : North West Himalayas to Assam and Burma.
31. **Dercas verhuelli** (Doub) Tailed Sulphur. Not rare.
Distribution : Sikkim to Assam and Burma.
Family : HESPERIDAE
32. **Baoris farri** (Moore) Paint Brush Swift. Not rare.
Distribution : Sikkim, Bengal, Bihar, Assam to Burma.
33. **Polytremis eltola** (Hewitson) Yellow Spot Swift. Common.
Distribution : Assam.

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